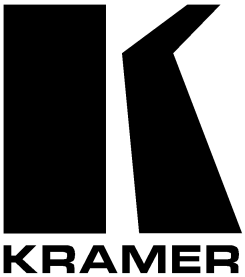
# Kramer Electronics, Ltd.




# USER MANUAL

## Models:

**VP-200NK,** ***1:2 High Resolution XGA DA***

**VP-300NK,** ***1:3 High Resolution XGA DA***

**VP-400NK,** ***1:4 High Resolution XGA DA***

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# 1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 500-plus different models now appear in 8 Groups[1], which are clearly defined by function. Congratulations on purchasing your Kramer TOOLS **VP-200NK** *1:2 High Resolution XGA DA* and/or **VP-300NK** *1:3 High Resolution XGA DA* and/or **VP-400NK** *1:4 High Resolution XGA DA,* which are ideal for:

- Dual monitor systems, stores, and points of sale
- Presentation systems

The package includes the following items:

- **VP-200NK** *1:2 High Resolution XGA DA* and/or **VP-300NK** *1:3 High Resolution XGA DA* and/or **VP-400NK** *1:4 High Resolution XGA DA*
- Power adapter (12V DC Input) and this user manual[2]

# 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[3]

## 2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps[4].

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

4 This quick start also applies to the VP-200NK, which has two outputs, and the VP-400NK, which has four outputs

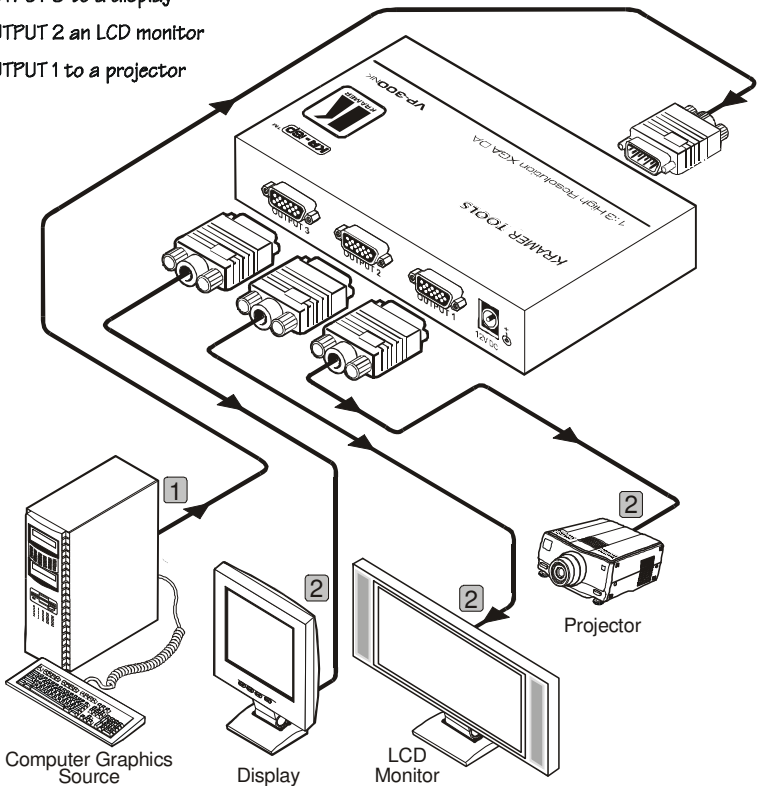
## Step 1: Connect the input and the outputs - see section 5

1 Connect a computer graphics source to the INPUT

2 Connect the outputs to the acceptors:

- OUTPUT 3 to a display
- OUTPUT 2 an LCD monitor
- OUTPUT 1 to a projector

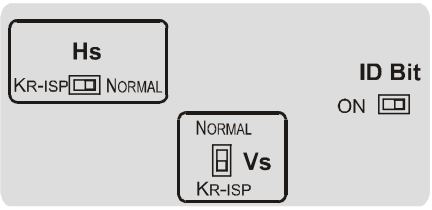
**Applies to: VP-200NK, VP-300NK and VP-400NK**




## Step 2: Connect the power

## Step 3: Set the underside switches - see section 4

Set the Hs and Vs polarity switches




ID Bit ON

Set the ID Bit switch

# 3 Overview

The Kramer TOOLS **VP-200NK**, **VP-300NK** and **VP-400NK** are 1:2, 1:3 and 1:4 (respectively) distribution amplifiers for XGA and higher resolution signals with a unique new feature. They include the Kramer innovative integrated sync processing; KR - ISP™ technology, which lets you achieve a sharp, stable image when the sync level is too low, by restoring the sync signal waveform.

The **VP-200NK**, **VP-300NK** and **VP-400NK** accept one input, provide correct buffering and isolation, and then distribute the signal to two, three or four (respectively) identical outputs on high-density 15 pin HD connectors.

In particular, the *High Resolution XGA DA*:

- Has a high video bandwidth exceeding 430MHz, ensuring that it remains transparent even at high-resolution graphics modes such as UXGA (1600x1200)
- Includes ID Bit control
- Is 12VDC fed

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **VP-200NK**, **VP-300NK** and **VP-400NK** away from moisture, excessive sunlight and dust

**Caution** – No operator-serviceable parts inside unit.

**Warning** – Use only the Kramer Electronics input power wall adapter that is provided with this unit[1].

**Warning** – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

# 4 Your High Resolution XGA DA

This section defines the:

- **VP-200NK** *1:2 High Resolution XGA DA* (see section 4.1)
- **VP-300NK** *1:3 High Resolution XGA DA* (see section 4.2)
- **VP-200NK** *1:4 High Resolution XGA DA* (see section 4.3)
- Underside of the **VP-200NK**, **VP-300NK** and **VP-400NK** (see section 4.4)

1 For example: model number AD2512C, part number 2535-000251

## 4.1 Your VP-200NK 1:2 High Resolution XGA DA

Figure 1, Figure 2, Figure 3 and Table 1 define the **VP-200NK**:

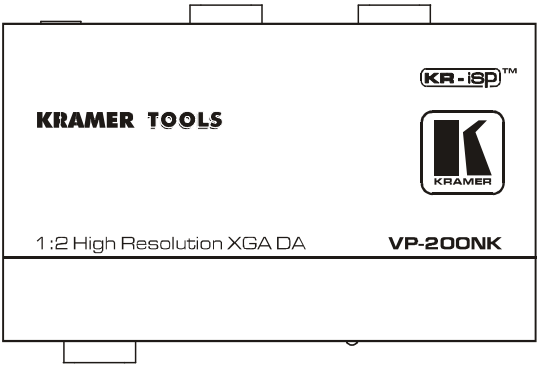



*Figure 1: VP-200NK 1:2 High Resolution XGA DA*

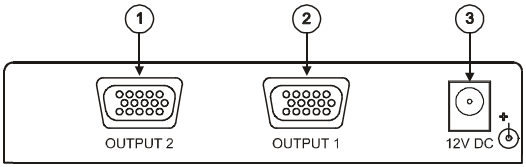



*Figure 2: VP-200NK (Top Side Panel)*

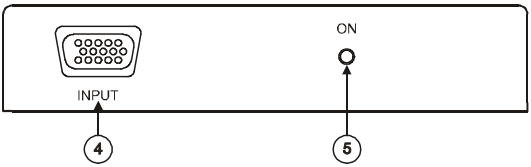



*Figure 3: VP-200NK (Lower Side Panel)*

*Table 1: VP-200NK 1:2 High Resolution XGA DA Features*

| # | Feature | Function |
|---|---|---|
| 1 | *OUTPUT 2* HD15F Connector | Connect to the computer graphics acceptor 2 |
| 2 | *OUTPUT 1* HD15F Connector | Connect to the computer graphics acceptor 1 |
| 3 | *12V DC* | +12V DC connector for powering the unit |
| 4 | *INPUT* HD15F Connector | Connect to the computer graphics source |
| 5 | *ON* LED | Illuminates when receiving power |

## 4.2 Your VP-300NK 1:3 High Resolution XGA DA

Figure 4, Figure 5, Figure 6 and Table 2 define the **VP-300NK**:

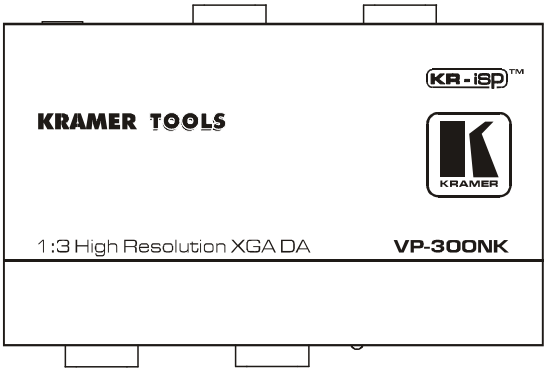



*Figure 4: VP-300NK 1:3 High Resolution XGA DA*

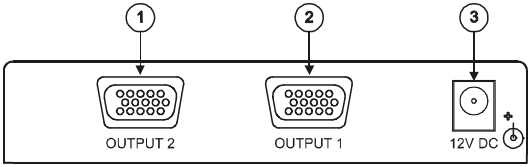



*Figure 5: VP-300NK (Top Side Panel)*

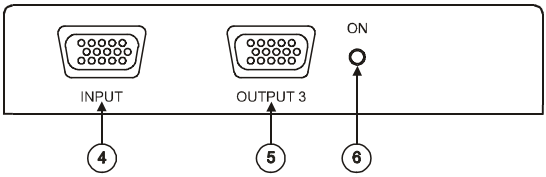



*Figure 6: VP-300NK (Lower Side Panel)*

*Table 2: VP-300NK 1:3 High Resolution XGA DA Features*

| # | Feature | Function |
|---|---|---|
| 1 | *OUTPUT 2* HD15F Connector | Connect to the computer graphics acceptor 2 |
| 2 | *OUTPUT 1* HD15F Connector | Connect to the computer graphics acceptor 1 |
| 3 | *12V DC* | +12V DC connector for powering the unit |
| 4 | *INPUT* HD15F Connector | Connect to the computer graphics source |
| 5 | *OUTPUT 3* HD15F Connector | Connect to the computer graphics acceptor 3 |
| 6 | *ON* LED | Illuminates when receiving power |

## 4.3 Your VP-400NK 1:4 High Resolution XGA DA

Figure 7, Figure 8, Figure 9 and Table 3 define the **VP-400NK**:

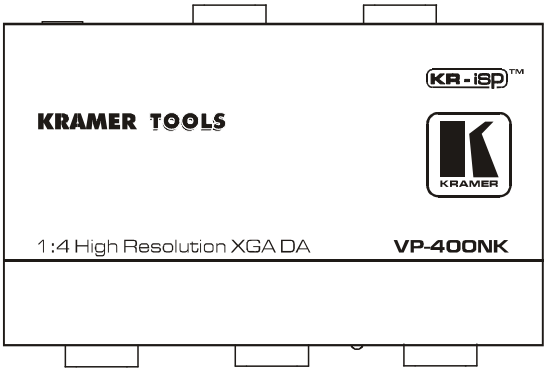



*Figure 7: VP-400NK 1:4 High Resolution XGA DA*

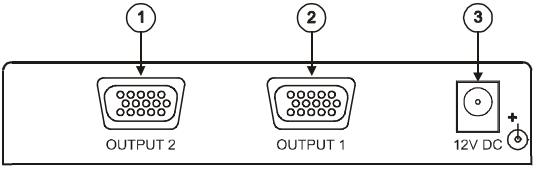



*Figure 8: VP-400NK (Top Side Panel)*

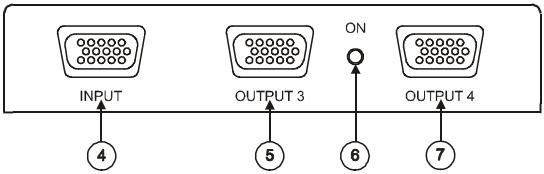



*Figure 9: VP-400NK (Lower Side Panel)*

*Table 3: VP-400NK 1:4 High Resolution XGA DA Features*

| # | Feature | Function |
|---|---|---|
| 1 | *OUTPUT 2* HD15F Connector | Connect to the computer graphics acceptor 2 |
| 2 | *OUTPUT 1* HD15F Connector | Connect to the computer graphics acceptor 1 |
| 3 | *12V DC* | +12V DC connector for powering the unit |
| 4 | *INPUT* HD15F Connector | Connect to the computer graphics source |
| 5 | *OUTPUT 3* HD15F Connector | Connect to the computer graphics acceptor 3 |
| 6 | *ON* LED | Illuminates when receiving power |
| 7 | *OUTPUT 4* HD15F Connector | Connect to the computer graphics acceptor 4 |

## 4.4 The Machine Underside

Figure 10 and Table 4 define the underside of the **VP-200NK**[1]:

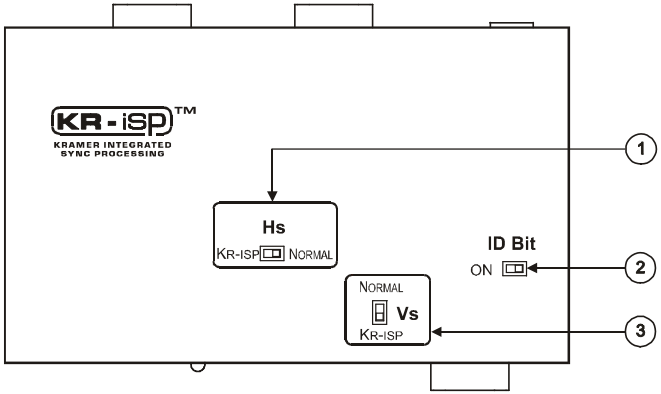



*Figure 10: High Resolution XGA DA (Underside)*

*Table 4: High Resolution XGA DA (Underside) Features*

| # | Feature | Function |
|---|---|---|
| 1 | *Hs Switch* | Slide the switch to the right (NORMAL[2]) to retain the polarity; slide the switch to the left to change the Hs polarity to KR-ISP |
| 2 | *ID Bit* Switch | Slide to the left to set to ON[3]; to the right to set to OFF |
| 3 | *Vs Switch* | Slide the switch up (NORMAL[2]) to retain the polarity; slide the switch down to change the Vs polarity to KR-ISP |

1 The underside of the VP-300NK and the VP-400NK are identical

2 By default, both switches are set to NORMAL

3 The default. Enabling the notebook or laptop to output a VGA signal to an external VGA monitor

# 5 Connecting the VP-300NK 1:3 High Resolution XGA DA

To connect your **VP-300NK** *1:3 High Resolution XGA DA*[1], as the example in Figure 11 illustrates, do the following[2]:

1. Connect a computer graphics source to the INPUT HD15F connector.
2. Connect the OUTPUT HD15F connectors to up to three[3] acceptors, as follows:
   - Connect the OUTPUT 1 connector to acceptor 1 (for example, a projector)
   - Connect the OUTPUT 2 connector to acceptor 2 (for example, an LCD monitor)
   - Connect the OUTPUT 3 connector to acceptor 3 (for example, a display)
3. Connect the 12V DC power adapter (wall transformer) to the 12V DC socket and connect the transformer to the mains electricity.
4. If required, set the:
   - Hs and Vs switches
   - ID Bit switch to ON

1 From this section on, all the information is relevant to the VP-200NK, VP-300NK and VP-400NK, unless noted otherwise

2 Switch OFF the power on each device before connecting it to your VP-300NK. After powering up your VP-300NK, switch on the power on each device

3 Two for the VP-200NK and four for the VP-400NK

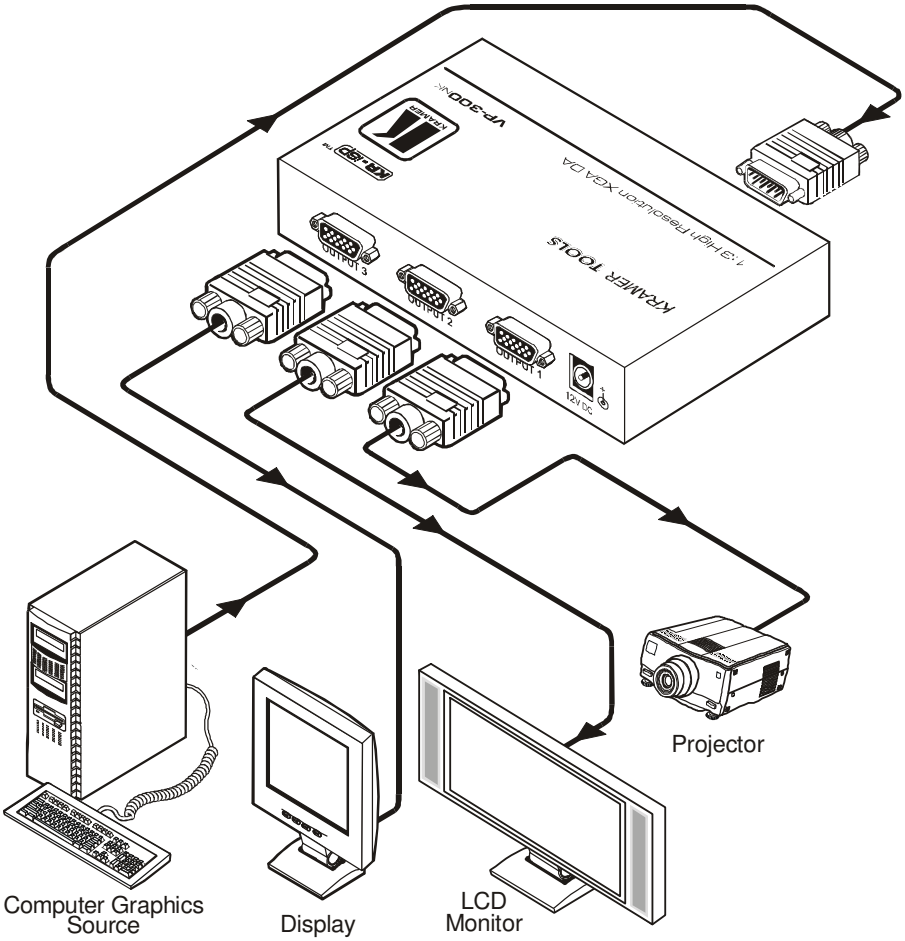



*Figure 11: Connecting the VP-300NK 1:3 High Resolution XGA DA*

# 6 Technical Specifications

Table 5 includes the technical specifications:

*Table 5: Technical Specifications[1] of the High Resolution XGA DA*

| | VP-200NK | VP-300NK | VP-400NK |
|---|---|---|---|
| INPUT: | 1 XGA on an HD15F connector | | |
| OUTPUTS: | 2 XGA on HD15F connectors | 3 XGA on HD15F connectors | 4 XGA on HD15F connectors |
| MAX. OUTPUT LEVEL: | 2.2Vpp | | |
| BANDWIDTH (-3dB): | 430MHz | 400MHz | |
| DIFF. GAIN: | 0.05% | | |
| DIFF. PHASE: | 0.05° | | |
| K-FACTOR: | <0.05% | | |
| S/N RATIO: | 72dB | | |
| CONTROLS: | ID BIT switch on the underside; Hs and Vs switches for setting the sync (normal or KR-ISP) | | |
| COUPLING: | DC | | |
| POWER SOURCE: | 12 VDC, 116mA | | |
| DIMENSIONS: | 12cm x 7.18cm x 2.42cm (4.7" x 2.8" x 0.95"), W, D, H | | |
| WEIGHT: | 0.3 kg. (0.67 lbs.) approx. | | |
| ACCESSORIES: | Power supply, mounting bracket | | |
| OPTIONS: | 19" rack adapters | | |

1 Specifications are subject to change without notice

**LIMITED WARRANTY**

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

**HOW LONG IS THE WARRANTY**

Labor and parts are warranted for seven years from the date of the first customer purchase.

**WHO IS PROTECTED?**

Only the first purchase customer may enforce this warranty.

**WHAT IS COVERED AND WHAT IS NOT COVERED**

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

**WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR**

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

**HOW YOU CAN GET WARRANTY SERVICE**

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

**LIMITATION OF IMPLIED WARRANTIES**

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

**EXCLUSION OF DAMAGES**

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

**NOTE:** All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

| | |
|---|---|
| EN-50081: | "Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry" |
| EN-50082: | "Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment". |
| CFR-47: | FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B Unintentional radiators" |

**CAUTION!**

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

**For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found.**
**We welcome your questions, comments and feedback.**

**Safety Warning**:
Disconnect the unit from the power supply before opening/servicing.

**Kramer Electronics, Ltd.**
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E-mail: info@kramerel.com
**P/N: 2900-000250 REV 1**